Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1 (previously presented) A method of evaluating a feature in a semiconductor wafer, the method comprising:

illuminating the wafer with a beam of electromagnetic radiation having a majority of energy polarized in a direction, said direction being other than parallel to a longitudinal direction of the feature; and

measuring intensity of a portion of the beam reflected by the wafer.

2 (original) The method of Claim 1 wherein:

the feature includes a sidewall of a groove; and

the act of measuring is performed repeatedly at a plurality of locations transverse to the longitudinal direction of the groove.

3 (original) The method of Claim 2 wherein:

the beam has a wavelength greater than thickness of the sidewall.

4 (original) The method of Claim 1 wherein:

the beam has a wavelength greater than a dimension of the feature; and

the beam forms on the wafer a spot of a diameter greater than the dimension.

5 (original) The method of Claim 1 wherein:

the feature includes a trace of reflective material.

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6 (original) The method of Claim 1 wherein:

the wafer includes a layer located between a source of the beam and the feature; and

the layer is at least partially transmissive, so that the portion passes through the layer.

7 (original) The method of Claim 1 wherein:

the beam has a majority of energy polarized in a direction at least substantially perpendicular to the longitudinal direction.

8 (original) The method of Claim 1 wherein:

the beam has a predetermined wavelength; and

the method further comprises filtering light of a wavelength other than the predetermined wavelength.

9 (original) The method of Claim 1 wherein the wafer has a plurality of features including the feature, and the method further comprises:

performing the act of measuring for each feature of the plurality; and

comparing measurements of multiple features.

10 (original) The method of Claim 9 wherein:

each feature is a sidewall; and

the act of comparing includes comparing measurements of two sidewalls located opposite to one another in a groove.

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11 (original) The method of Claim 1 wherein the beam is a first beam, and the method further comprises:

illuminating the wafer with a second beam of electromagnetic radiation.

12 (original) The method of Claim 11 wherein:

the first beam forms a first spot on the wafer, the second beam forms a second spot;

the act of measuring includes measuring with the first spot and the second spots located on opposite sides of the feature; and

the method further comprises measuring with the first spot and the second spots located on the same side of the feature.

13 (original) The method of Claim 11 wherein:

the second spot at least partially overlaps the first spot.

14 (original) The method of Claim 13 wherein:

the first beam has a first wavelength different from a second wavelength of the second beam;

the second beam is modulated at a predetermined frequency; and

the act of measuring includes measuring intensity of the second beam having the second wavelength and modulated at the predetermined frequency.

15 (original) The method of Claim 13 wherein:

the first beam is polarized substantially perpendicular to the longitudinal direction.

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16 (previously presented) The method of Claim 1 further comprising:

forming the feature of conductive material in the wafer by using at least one process parameter;

repeatedly performing said measuring intensity; and

changing the process parameter depending on measurements obtained from the act of repeatedly measuring.

17 (previously presented) A method of evaluating wafers during fabrication, the method comprising:

forming a feature of conductive material in a wafer by using at least one process parameter;

illuminating the wafer with a beam of electromagnetic radiation having a majority of energy polarized in a direction other than parallel to a longitudinal direction of the feature; and

repeatedly measuring intensity of a portion of the beam reflected by the wafer at a plurality of locations transverse to the longitudinal direction;

changing the process parameter depending on measurements obtained from the act of repeatedly measuring;

determining a coefficient of a function that fits the measurements;

comparing the coefficient against a predetermined limit and performing the changing based on an outcome of the comparing.

Claims 18-28 (canceled).

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29 (previously presented) An apparatus for evaluating a feature in a wafer, the apparatus comprising:

a laser source for generating a beam polarized in a direction, wherein said direction is other than parallel to a longitudinal direction of the feature; and

a photosensitive element located in a path of radiation of electromagnetic energy from the wafer.

30 (original) The apparatus of Claim 29 further comprising:

a circuit coupled to the laser to move the beam along a line across the feature; and

a monitor for displaying a graph of a signal generated by the photosensitive element as a function of distance along the line.

31 (original) The apparatus of Claim 30 wherein:

the line is at least substantially perpendicular to the longitudinal direction of the feature.

32 (original) The apparatus of Claim 29 further comprising:

an oscillator capable of oscillating at a frequency lower than 25000 Hz, the oscillator being coupled to the laser source; and

a lock-in amplifier coupled to said oscillator and to said photosensitive element.

33 (original) The apparatus of Claim 32 wherein during operation:

said oscillator causes said laser source to generate said beam at an intensity modulated at said frequency; and

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said lock-in amplifier generates a signal indicative of ref1ectivity of said wafer.

34 (original) The apparatus of Claim 29 further comprising:

a computer coupled to the photosensitive element and programmed to determine a

dimension of the feature.

35 (original) The apparatus of Claim 34 further comprising:

a memory having encoded therein values generated from at least one test wafer having a feature of a known property;

wherein the computer is programmed to use a signal generated by the photosensitive element to look up a value of property for the wafer, based on the values in memory.

36 (previously presented) An apparatus comprising:

means for illuminating a semiconductor wafer with a beam of electromagnetic radiation having a majority of energy polarized in a direction, wherein said direction is other than parallel to a longitudinal direction of the feature; and

means for measuring intensity of a portion of the beam reflected by the wafer, the means for measuring being coupled to the means for illuminating.

37 (original) The apparatus of Claim 36 further comprising:

means for displaying measurements generated by the means for measuring, as a function of distance.

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38 (original) The method of Claim 17 wherein:

the feature includes a sidewall of a groove.

39 (original) The method of Claim 38 wherein:

the beam has a wavelength greater than thickness of the sidewall.

40 (original) The method of Claim 17 wherein:

the beam has a wavelength greater than a dimension of the feature; and

the beam forms on the wafer a spot of a diameter greater than the dimension.

41 (original) The method of Claim 17 wherein:

the feature includes a trace of reflective material.

42 (original) The method of Claim 17 wherein:

the wafer includes a layer located between a source of the beam and the feature; and

the layer is at least partially transmissive, so that the portion passes through the layer.

43 (original) The method of Claim 17 wherein:

the beam has a predetermined wavelength; and

the method further comprises filtering light of a wavelength other than the predetermined wavelength.

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44 (original) The method of Claim 17 wherein the wafer has a plurality of features including the feature, and the method further comprises:

performing the act of measuring for each feature of the plurality; and

comparing measurements of multiple features.

45 (original) The method of Claim 17 wherein the beam is a first beam, and the method further comprises:

illuminating the wafer with a second beam of electromagnetic radiation.

46 (original) The method of Claim 45 wherein:

the first beam forms a first spot on the wafer, the second beam forms a second spot;

the act of measuring includes measuring with the first spot and the second spots located on opposite sides of the feature; and

the method further comprises measuring with the first spot and the second spots located on the same side of the feature.

47 (original) The method of Claim 46 wherein:

the second spot at least partially overlaps the first spot.

48 (currently amended) A method of evaluating ~~a sidewall of~~ a groove in a semiconductor wafer, the method comprising:

illuminating the wafer with a beam of light polarized in a direction P, said direction P forming an angle θ with a longitudinal direction of the ~~sidewall~~ groove, with angle $\theta > 45°$~~,~~ ;

wherein the beam has a wavelength larger than a width of the groove, the ~~sidewall~~ groove is formed of a ~~conductive~~ highly reflective material, and the groove

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has a first sidewall, a second sidewall and a floor between the first sidewall and the second sidewall;

heating of the groove by a portion of the light polarized perpendicular to the groove ~~is converted into heat and~~, heat from said heating being transmitted into a substrate of the semiconductor wafer; and

measuring intensity of light reflected by the wafer, wherein light absorbed in the groove measurably reduces the reflected light.

49 (original) The method of Claim 48 wherein:

using a measurement obtained from said measuring as an indication of a thickness of the sidewall.

50 (original) The method of Claim 48 wherein:

with angle θ is approximately 90°.

51 (original) The method of Claim 50 wherein:

said light reflected by the wafer is part of said beam.

52 (original) The method of Claim 50 wherein:

said light reflected by the wafer is part of another beam.

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